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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,639	08/16/2006	Toshio Isozaki	294568US0PCT	2292

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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P.
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ALEXANDRIA, VA 22314

EXAMINER

LACLAIR, DARCY D

ART UNIT	PAPER NUMBER
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1796

NOTIFICATION DATE	DELIVERY MODE
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05/14/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/589,639	Applicant(s) ISOZAKI ET AL.	
	Examiner Darcy D. LaClair	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,7,8 and 11-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,7,8 and 11-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on **4/26/2010** has been entered.

All outstanding rejections, except for those maintained below are withdrawn in light of the amendment filed on **4/26/2010**.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

2. **Claims 1, 3-4 and 11-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Okamoto et al. (WO 02/36687 A1)** in view of **Meyer et al. (US 2004/0030090)**.

It is noted that the international Patent Application WO publication is being utilized for date purposes. However, since **WO 02/36687** in Japanese, in the discussion below, the US equivalent for **WO 02/36687**, namely **US 2004/0030044**) is referred to in the body of the rejection below. All column and line citations are to the US equivalent.

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With respect to Claims 1 and 12, Okamoto teaches a polycarbonate resin composition for parts such as home and office appliances, telephones, automobile parts, and the like (see par [0180]), having a resin mixture having 1 to 99 percent by weight of a polycarbonate based resin and from 1 to 99 parts by weight of a styrenic resin. (See par [0158]) Okamoto teaches that the polycarbonate component (see par [0159]) includes a terminal modified polycarbonate prepared from dihydroxydiphenyls (see par [0063]), consistent with applicant's (A-1) and other polycarbonate copolymers such as polycarbonate polyorganosiloxane copolymer, consistent with applicant's (A-2). (See par [0133]) Okamoto exemplifies the terminal modified polycarbonate to polycarbonate-polyorganosiloxane ratio as 75:25, 50:25, (See Table II-1-(1)) 65:25, 10:80, 50:40 (See Table II-2-(1)) and other ratios falling within applicant's required relationships for component (A-1) and component (A-2). (See Table III-1, III-3) The styrene resins are acrylonitrile-styrene copolymers (AS), (see par [0161]) or rubber modified styrene resins such as ABS resins, MBS resins, (see par [0162], [0164]) having between 2 and 50% weight of rubber modifying them. (See par [0163]) This is consistent with an amorphous styrene. The composition additionally contains from 0.2 to 5 parts by weight of a functional group having silicone compound. (See par [0171]-[0172]) Okamoto does not explicitly teach a content of dihydroxybiphenyl in the terminal modified polycarbonate.

Meyer teaches polycarbonates with special terminal groups, and processes for producing such resins. (See abstract) These resins are composed of phenolic compounds including diphenols such as dihydroxybiphenyls, (see par [0078]), with 4,4'-

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dihydroxybiphenyl (DOD) as a preferred diphenol (see par [0079]). Meyer exemplifies as a co-polycarbonate which contains 0.14 mole of bisphenol A, 0.06 mole of dihydroxybiphenyl, 0.223 mole of diphenyl carbonate, 0.0028 mole of additional compounds. (See Example 11, par [0192]-[0193]) This is a total of 0.4258 moles; with 0.06 moles of dihydroxybiphenyl, Meyer's compound contains 14.1 mol% of dihydroxybiphenyl, which is within applicant's claimed range. Meyer teaches that these polycarbonates do not exhibit high zero sheer viscosity or undergo degradation under thermal stress such as extrusion or injection molding (see par [0018]) and can be mixed with other thermoplastics, and processed into molded articles or extrudates. (See par [0117]) They are particularly applicable for safety panels for vehicles and aircraft, production of fibres and threads, production of molded articles and precision injection molded parts, production of optical instrument parts, mobile telephone housings, applications in the automobile sector. (See par [0119]-[0148]) This is consistent with Okamoto's use of the polycarbonate. Furthermore, it would be obvious to employ the terminal modified polycarbonate of Meyer as the terminal modified polycarbonate described by Okamoto in order to enjoy the benefit of the decreased viscosity which would improve the processing and injectibility of the resin, as well as the improved thermal stress resistance, which would allow the composition to be processed via injection molding or extrusion with less risk of degradation.

With respect to Claims 3 and 4, Okamoto teaches that the polycarbonate-polyorganosilixane copolymer is prepared by dissolving a polycarbonate oligomer and a

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polyorganosiloxane having a reactive group at its terminal, such as polydimethylsiloxane. (See par [0133])

With respect to Claim 11, Okamoto teaches that moldings of the resin composition are prepared and used in various housings and parts. (See par [0180])

With respect to Claim 13 and 15, Okamoto teaches that the composition contains inorganic filler from 2 to 50 parts by weight per 100 parts by weight of the resin mixture. (See par [0176])

With respect to Claim 14 and 16, Okamoto teaches a core/shell type grafted rubber elastomer for use in the composition (see par [0143],[0144]) which acts as a impact resistance improver due to its rubber-like properties. This is present in 0.2 to 10 parts by weight relative to 100 parts by weight of the polycarbonate based resin. (See par [0149])

With respect to Claim 17, the functional group having silicone has the basic structure of formula $R^1_a R^2_b SiO_{(4-a-b)/2}$, where R1 is a functional group, and R2 is a hydrocarbon residue having from 1 to 12 carbon atoms, and $0 < a \leq 3$, $0 < b \leq 3$ and $0 < a+b \leq 3$. The functional group is an alkoxy group, an aryloxy group, a polyoxyalkylene group, a hydride residue, a hydroxyl group, a carboxyl group, a silanol group, an amino group, a mercapto group, an epoxy group. (See par [0138])

3. **Claims 7-8** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Okamoto et al. (WO 02/36687 A1)** in view of **Meyer et al. (US 2004/0030090)** and **Laughner et al. (US 4,786,686)**

The discussion of **Okamoto** and **Meyer**, above in **paragraph 2**, is incorporated here by reference.

With regard to Claims 7 and 8, Okamoto teaches that typical additives to improve the properties of the composition, such as flame retardants, and flame retardation promoters can be added to the composition. (See par [0086], [0177]) Furthermore, Okamoto desires to reduce or eliminate the halogen and/or phosphorous containing flame retardants. (See [0400]) Okamoto does not explicitly teach an alkali/alkaline metal salt. Laughner teaches the incorporation of metal salts of sulfur compounds, such as aromatic sulfonates, sulfates, and others, where the cation is preferably an alkali metal. (See col 4 line 26-59) Specifically, Laughner teaches aromatic sulfonates where the cation is preferably an alkali metal. (See col 4 line 26-59). This is consistent with an alkali metal sulfonate. The metal salt is included in amounts ranging from 0.001 to 2 percent, by weight, in order to provide resistance to the effects of burning. (See col 5 line 33-46) It would have been obvious to one of ordinary skill in the art to include the alkali metal sulfonates of Laughner in the composition of Okamoto in order to increase the resistance to burning while maintaining a reduction or absence of halogen and/or phosphorous containing flame retardants, and to realize improved flame retardance provided by this known additive.

Response to Arguments

4. Applicant's arguments filed **4/26/2010** have been fully considered. Specifically, applicant argues

(A) Claim 1 has been amended to restore the mass ratio of component (A) to component (B) to be that of the original ratio of 50:50 to 95:5.

(B) Claims 1, 3, 7, 8, 11 and 4 are rejected over a combination of Laughner '154, Laughner '686, Meyer '090, Paul '970, Nodera '929, and Wypych. None of the cited references disclose component (F) of the claimed polycarbonate resin composition.

5. **With respect to argument (A)**, applicant's arguments have been considered and the 112 first paragraph rejection has been withdrawn ***in light of applicant's amendment***. Support for the amendment in the original claim language is acknowledged.

With respect to argument (B), applicant's arguments have been considered and the rejection has been withdrawn ***in light of applicant's amendment***. Support for the amendments to Claim 1 and New Claim 17 is found on page 16, paragraph [0033]. Support for new Claims 12, Claims 13 and 15, and Claims 14 and 16 is noted in original Claim 1, Original Claims 5 and 9, and Original Claims 6 and 10, respectively.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Darcy D. LaClair whose telephone number is (571)270-5462. The examiner can normally be reached on Monday-Friday 8:30-6.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Milton I. Cano/
Supervisory Patent Examiner, Art Unit 1796

Darcy D. LaClair
Examiner
Art Unit 1796

/DDL/